

REMARKS/ARGUMENTS

A total of 26 claims remain pending in the present application. The foregoing amendments are presented in response to the Office Action mailed May 18, 2006 wherefore reconsideration of this application is requested.

By way of the above-noted amendments, claim 1 has been amended to further clarify the present invention. Claim 12 has been amended to correct a typographical error.

Claims 2-14 and 17-29 remain pending.

In preparing the above-noted amendments, careful attention was paid to ensure that no new subject matter has been introduced.

Referring now to the text of the Office Action:

Applicant appreciates the Examiner's indication of allowable subject matter in claims 3, 4, 10-14, 23 and 26-29.

Claims 2, 5-9, 17-22, and 24-25 stand rejected under 35 USC § 103(a) as being unpatentable over Nair et al. (US 2002/0103921) in view of Brown et al. (US 4,710,926). The Examiner's rejections under 35 USC § 103(a) are believed to be traversed by the above-noted claim amendments. In particular, rejected independent claim 1 has been amended to clarify that the heartbeat monitor sends a heartbeat inquiry message to each of the first and second control processors. A similar limitation can be found in the previously amended independent claim 17.

The Examiner asserts that Brown et al. disclose a dynamic heartbeat monitor for processors (abstract, col. 1, lines 56-66) and that it would therefore have been obvious to one skilled in the art at the time the invention was made to have a heartbeat monitor for processors in the invention of Nair et al. in order to provide fault tolerance by using a spare (backup) processor (col. 1, lines 50-53). Applicant submits that Brown et al. disclose a system where the processors continually monitor heartbeats from other processors and each processor is capable of taking autonomous recovery action in response to the failure to receive heartbeats (col. 1, lines 7-12). The heartbeat messages are broadcast at regular intervals from each individual processor to the other processors in the system (col. 2, lines 14-16). Each processor maintains a heartbeat module which includes the programs necessary for generating and corresponding to heartbeat messages conveyed among each of the processors (Fig. 9).

In contrast, the present invention provides for the monitoring of critical processes on the controlled processes by a heartbeat monitor external to the control processors. In particular, the heartbeat monitor sends queries to select processes operating on each of the processors requesting a heartbeat as detailed in the claims. This aspect of the invention is not contemplated or discussed by Brown et al. and it is submitted that it would not be obvious to a person of ordinary skill in the art. As noted by the Examiner, Nair et al. do not disclose a heartbeat monitor for processors either. It is therefore submitted that the pending claims 2-14 and 17-29 present subject matter that is not taught or suggested by Nair et al. or Brown et al. either alone or in combination.

Accordingly, it is respectfully submitted that the present claimed invention is clearly distinguishable over the teaching of the cited references. Thus it is believed that the patent application is in a condition for allowance, and early action in that respect is courteously solicited.

Respectfully submitted,

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